AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A kit for ~~visualising~~ displaying a cutting regime of a rough diamond, the kit comprising:

(a) a solid, translucent substance into which three dimensional images are marked, said ~~markings~~ images indicating:

(i) the outer surface of the ~~original~~ rough diamond; and ~~diamond,~~

~~(ii) optionally, the internal defects of the rough diamond, said markings indicating the position and shape of said defects with respect of the rough diamond,~~

~~(iii) optionally, the outer surface of one or more cut diamonds, said markings indicating the position and shape of said cut diamonds with respect of the rough diamond, and~~

(b) ~~solid, physical representations of one or more diamonds indicated by the markings of item (iii), and/or~~

~~solid,~~ a physical representation of the rough diamond, corresponding to the images.~~markings of item (i), and/or~~

~~one or more actual cut diamonds indicated by the markings of item (iii).~~

2. (Currently Amended) A kit for ~~visualising~~ displaying a cutting regime of a rough diamond, the kit comprising:

(a) a hologram depicting ~~markings~~ images which indicate:

(i) the outer surface of the ~~original~~ rough diamond; and~~diamond,~~

~~(ii) optionally, internal defects of the rough diamond, said markings indicating the position and shape of said defects with respect of the rough diamond,~~

~~(iii) optionally, the outer surface of one or more cut diamonds, said markings indicating the position and shape of said cut diamonds with respect of the rough diamond,~~

(b) ~~solid, physical representations of one or more diamonds, said diamonds corresponding to the markings of item (iii), and/or~~

~~solid,~~ a physical representation of the rough cut diamond, corresponding to the images.~~markings of item (i), and/or~~

~~one or more actual cut diamonds indicated by the markings of item (iii)~~

3. (Currently Amended) A device for ~~visualising~~ displaying a cutting regime of a rough diamond, the device comprising a solid, translucent substance into which three dimensional images are marked, said ~~markings~~ images indicating:

(i) the outer surface of the ~~original~~ rough diamond.~~diamond,~~

~~(ii) optionally, internal defects of the rough diamond, said markings indicating the position and shape of said defects with respect of the rough diamond, and~~

~~(iii) optionally, the outer surface of one or more cut diamonds, said markings indicating the position and shape of said cut diamonds with respect of the rough diamond.~~

4. (Currently Amended) A kit according to claim 1, ~~or a device according to claim 3~~ wherein the shape of said solid, translucent substance is substantially a cube, sphere or box.

5. (Currently Amended) A kit according to claim 1, ~~or a device according to claim 3~~ wherein the shape of said solid, translucent substance is substantially the same as that of the outer surface of the rough diamond.~~, with or without the features of any of items (i), (ii), and/or (iii).~~

6. (Currently Amended) A kit according to claim 1, ~~any of claims 1, 2, 4 and 5 or a device according to any of claims 3 to 5~~ further comprising a computer readable storage medium on which data regarding one or more of the following is stored: certification of ~~the~~ a cut diamond cut from the rough diamond, history of the ~~stone~~rough diamond, history of ~~the~~ a mine from which the rough diamond was found, history of manufacturing of a cut diamond cut from the rough diamond, history of trading the rough diamond.

7. (Currently Amended) A kit according to claim 1, ~~any of claim 1 and 4 to 6, or a device according to any of claims 3 to 6,~~ wherein said solid, translucent substance ~~is~~ comprises at least one of glass and crystal. ~~glass or crystal.~~

8. (Currently Amended) A kit according to claim 1, ~~any of claim 1, 2, 4 to 7,~~ wherein said ~~solid,~~ physical representation comprises at least one of glass and crystal. ~~s of item (b) are made of glass or crystal.~~

9. (Currently Amended) A kit according to claim 1, ~~any of claims 1 to 4, 6 to 8, or a device according to any of claims 5 to 7~~ wherein ~~solid,~~said physical representation[s] ~~of item (b)~~ further comprises markings which indicate at least one of a defect and ~~the three dimensional boundaries of defects and/or where the outer~~ a contour of a location where the rough diamond touches ~~that of the~~a cut diamond.

10. (Cancelled)

11. (Currently Amended) A method ~~for~~ of determining a cutting regime of a rough diamond, the method comprising: ~~the steps of:~~

(a) obtaining a three dimensional numerical representation of the rough diamond;~~diamond,~~

(b) obtaining a three dimensional numerical representation of ~~the~~ one or more defects ~~therein,~~ of the rough diamond;

(c) changing the positions, sizes and orientations of ~~models~~ numerical representations of one or more potential cut diamonds within the numerical representation of the rough diamond, ~~diamonds,~~

so as to ~~that the maximum~~ substantially maximize the value of the ~~collection of~~ one or more potential cut diamonds, ~~so optimized is obtained,~~ wherein said value based at least in part on the clarity, cut, ~~colour~~ color and carat of each of the one or more potential cut diamonds.

12. (Currently Amended) A method for determining a cutting regime of a rough diamond, the method comprising: ~~the steps of:~~

(a) obtaining a three dimensional numerical representation of the rough diamond,

(b) obtaining a three dimensional numerical representation of ~~the~~ one or more defects of the rough diamond; ~~therein,~~

(c) placing a model of a cut diamond within the numerical representation of the rough diamond;~~therein,~~

(d) scaling up the model until said model touches an outer surface of the numerical representation of the rough diamond or a numerical representation of the one or more defects;~~, or defect~~

(e) at least one of translating the model ~~and/or~~ and rotating the model;~~model,~~

(f) repeating ~~steps~~ (d) to (f) until no further scaling-up is possible;~~possible,~~

(g) storing the size and position of the model;~~model,~~

(h) repositioning the model ~~of step (c),~~ and repeating ~~steps (d)~~ (c) to (h), until no larger model is found;~~,~~

(i) obtaining the size and co-ordinates of the largest model by comparing the sizes stored in ~~step~~ (g);[,] and

(j) repeating ~~steps~~ (c) to (i) in order to determine the size and position of subsequent models, wherein the scaling of ~~step~~ (d) is also terminated upon touching any of the ~~previous~~ models~~(s)~~ determined in step (i).

13. (Currently Amended) A method ~~for~~ of determining a cutting regime of a rough diamond, the method comprising: ~~the steps of:~~

(a) obtaining a three dimensional numerical representation of the rough diamond;~~diamond,~~

(b) obtaining a three dimensional numerical representation of ~~the~~ one or more defects of the rough diamond;~~therein,~~

(c) generating a population of configurations of cut diamonds within the numerical representation of the rough diamond;[,]

(d) calculating the maximum scale factor for each configuration in the population;[,]

(e) creating a new population based on the ~~results~~ maximum scale factors of the first population,

(f) repeating ~~steps (d) to (f)~~(c) to (e) until the value of the cut ~~stones~~ diamonds converges to a maximum, and

(g) obtaining the size and co-ordinates of the cut diamonds which provide the maximum value of cut diamonds.

14. (Currently Amended) A computer program stored on a computer readable medium, configured to cause a computer to perform the method of claim 11 when executed. ~~capable of performing a method according to any of claims 11 to 13.~~

15. (New) The kit according to claim 1, wherein the images further indicate the position and shape of internal defects of the rough diamond.

16. (New) The kit according to claim 1, wherein the images further indicate the position and shape of the outer surface of one or more cut diamonds.

17. (New) The kit according to claim 16, further comprising a physical representation of one or more of the cut diamonds indicated by the images.

18. (New) The kit according to claim 2, wherein the images further indicate the position and shape of internal defects of the rough diamond.

19. (New) The kit according to claim 2, wherein the images further indicate the position and shape of the outer surface of one or more cut diamonds.

20. (New) The kit according to claim 19, further comprising a physical representation of one or more of the cut diamonds indicated by the images.

21. (New) The device according to claim 3, wherein the images further indicate the position and shape of internal defects of the rough diamond.

22. (New) The device according to claim 3, wherein the images further indicate the position and shape of the outer surface of one or more cut diamonds.

23. (New) The device according to claim 22, further comprising a physical representation of one or more of the cut diamonds indicated by the images.